

GEORGIA INSTITUTE OF TECHNOLOGY
OFFICE OF CONTRACT ADMINISTRATION
SPONSORED PROJECT INITIATION

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Date: March 9, 1978

Project Title: Industrial Energy Extension Service

Project No: A-2099

Project Director: W. T. Studstill

Sponsor: Georgia Office of Energy Resources

Agreement Period: From 2/1/78 Until 12/31/78

Type Agreement: Contract dated 2/1/78

Amount: \$500,997 (Includes sub-projects
E-18-616 \$14,680
E-19-661 \$28,087
E-27-663 \$24,465)

Reports Required: Monthly Financial and Progress Reports

Sponsor Contact Person (s):

Technical Matters

Contractual Matters

Mr. Ed Bistany
Georgia Office of Energy Resources
270 Washington Street
Atlanta, Georgia 30334

(thru OCA)

Defense Priority Rating:

Assigned to: Technology & Development Laboratory (School/Laboratory)

COPIES TO:

Project Director
Division Chief (EES)
School/Laboratory Director
Dean/Director—EES
Accounting Office
Procurement Office
Security Coordinator (OCA)
Reports Coordinator (OCA)

Library, Technical Reports Section
EES Information Office
EES Reports & Procedures
Project File (OCA)
Project Code (GTRI)
Other _____

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20
04/1

GEORGIA INSTITUTE OF TECHNOLOGY
OFFICE OF CONTRACT ADMINISTRATION
SPONSORED PROJECT TERMINATION

Date: 3/16/79

Project Title: Industrial Energy Extension Service

Project No: A-2099

Project Director: W. T. Studstill,

Sponsor: Georgia Office of Energy Resources

Effective Termination Date: 12/31/78

Clearance of Accounting Charges: 12/31/78

Grant/Contract Closeout Actions Remaining:

- ☐ Final Invoice and Closing Documents
- ☐ Final Fiscal Report
- ☐ Final Report of Inventions
- ☐ Govt. Property Inventory & Related Certificate
- ☐ Classified Material Certificate
- ☒ Other Following unexpended balances to be transferred to A-2099.

E-18-616	\$ 319.58
E-19-661	756.78
E-27-663	991.79
TOTAL	\$2,068.15

Assigned to: Technology & Development (School/Laboratory)

COPIES TO:

Project Director
Division Chief (EES)
School/Laboratory Director
Dean/Director-EES
Accounting Office
Procurement Office
Security Coordinator (OCA)
Reports Coordinator (OCA)

Library, Technical Reports Section
EES Information Office
Project File (OCA)
Project Code (GTRI)
Other _____

A-2099
E-18-616
E-19-661
E-27-663

DATE April 3, 1978

EXHIBIT C
FINANCIAL STATEMENT AND INVOICE NO. 1

CONTRACTOR: GEORGIA TECH RESEARCH INSTITUTE

MONTH: February 1, 1978 - February 28, 1978

OBJECT CLASS CATEGORIES	CURRENT MONTH	TOTALS TO-DATE
I. Personnel	<u>13,726.44</u>	<u>13,726.44</u>
II. Fringe Benefits	<u> </u>	<u> </u>
III. Travel*	<u>96.45</u>	<u>96.45</u>
IV. Publications	<u> </u>	<u> </u>
V. Overhead	<u>9,333.98</u>	<u>9,333.98</u>
VI. Materials and Supplies	<u>50.67</u>	<u>50.67</u>
VII. Other	<u> </u>	<u> </u>
Amount Requested for Reimbursement this Month	<u>23,207.54</u>	
Total Expenditures To-Date		<u>23,207.54</u>

*Supporting documentation required, to include at
least an itemized listing of costs submitted.

Attached

I certify that the above statement of services rendered, having been
compiled from bonafide time, salary and overhead cost records main-
tained by the Engineering Experiment Station
is true and correct to the best of my knowledge and belief; and that
reimbursement for the particular services and products indicated above
has not been received.

B. H. Atcheson

Title: Manager, Accounting & Budgets

REVIEWED, OFFICE OF PLANNING AND BUDGET:

Energy Resources - by Date

Administrative Office - by

Date

TITLE CODE _____

RESIDENCE Atlanta, Georgia 30308 DATE FROM 2/14/78 TO 2/14/78

DATE. Feb 16, '8

AUTOMOBILE MILEAGE RECORD

GEORGIA LICENSE NO. OF CAR GKS 750 PERIOD ENDING February 14, 1978

Prepare daily, using a separate block for each day's State use travel and for each departure from headquarters.

Day	DAILY TRAVEL (Points Visited)	SPEEDOMETER READING		MILES TRAVELED		
		Starting	Ending	Miles Daily	Personal Use	State Use
2/14 Tues.	FROM: Home Points Visited: TO: Airport and return	52826	52844	18		18
	FROM: Points Visited: TO:					
	FROM: Points Visited: TO:					
	FROM: Points Visited: TO:					
	FROM: Points Visited: TO:					
	FROM: Points Visited: TO:					
TOTAL MILES TRAVELED				18		18

Transfer total State use miles to travel expense section (front side) for computation of amount at the prescribed State mileage rate.

PURPOSE OF TRIP: (Attach prior approval form if applicable.)

Visit meat processing plant for Energy Conservation project A-2099-002

If traveling under a standing authorization please check ☒.

Day	COMMON CARRIER, TAXI/LIMOUSINE (Explain, attach receipts for common carrier)	Amount	Day	MISCELLANEOUS (Explain, attach receipts except for tele. and telg.)	Amount
2/14	Delta Airline to Savannah and return	82 59	2/14	Airport parking	3 00
TOTAL AMOUNT (Enter in appropriate line of above expense section)		82 59	TOTAL AMOUNT (Enter in appropriate line of above expense section)		3 00

DATE May 1, 1978

A-2099

add to
may 8, 1979A-2099
E-18-616
E-19-661
E-27-663

EXHIBIT C

FINANCIAL STATEMENT AND INVOICE NO. 2CONTRACTOR: GEORGIA TECH RESEARCH INSTITUTEMONTH: 3/1/78 - 3/31/78

OBJECT CLASS CATEGORIES	CURRENT MONTH	TOTALS TO-DATE
I. Personnel	<u>17,667.28</u>	<u>31,393.72</u>
II. Fringe Benefits	<u>2,523.82</u>	<u>2,523.82</u>
III. Travel*	<u>1,062.52</u>	<u>1,158.97</u>
IV. Publications	<u> </u>	<u> </u>
V. Overhead	<u>12,013.75</u>	<u>21,347.73</u>
VI. Materials and Supplies	<u>1,038.19</u>	<u>1,088.86</u>
VII. Other	<u> </u>	<u> </u>
Amount Requested for Reimbursement this Month	<u>34,305.56</u>	
Total Expenditures To-Date		<u>57,513.10</u>

*Supporting documentation required, to include at
least an itemized listing of costs submittedAttached

I certify that the above statement of services rendered, having been compiled from bonafide time, salary and overhead cost records maintained by the Engineering Experiment Station, Accounting Office is true and correct to the best of my knowledge and belief; and that reimbursement for the particular services and products indicated above has not been received.

B. H. AtchesonTitle: Manager, Accounting & BudgetsREVIEWED, OFFICE OF PLANNING AND BUDGET:

Energy Resources - by _____ Date _____

Administrative Office - by _____ Date _____

A-2099

ENGINEERING EXPERIMENT STATION

GEORGIA INSTITUTE OF TECHNOLOGY • ATLANTA, GEORGIA 30332

March 6, 1978

Georgia Office of Energy Resources
Trinity-Washington Building
270 Washington Street
Atlanta, Georgia 30334

Subject: Industrial Energy Extension Program
Monthly Progress Summary Report for
EES/GIT Research Project A-2099 for
Period 1 February 1978 through
28 February 1978

Dear Mr. Bistany:

This summarizes activities on Research Project A-2099 for the period
1 February 1978 through 28 February 1978.

Activities of February

1. Monthly activity highlights:

- . We have hired two additional engineers for the project. They will report for work on March 1 and March 27. We need two more for a full staff. We are continuing to interview prospects.
- . One staff member attended a power burner workshop held in Cleveland on February 16. Another member attended the seminar "Energy Conservation in the Textile Industry" in Atlanta on February 14 and 15.
- . We have printed the following items this month:
 - 1. Report covers for recommendation reports to management.
 - 2. "How to Cut Energy Costs" - a flyer format for mass technology transfer of conservation ideas to industry.
 - 3. Technology transfer tabs to be used to expedite technical information transfer.
- . Developed a one-day seminar entitled "Energy Conservation in Dyehouse Operations" for the Carpet and Rug Institute. This seminar will be presented in Dalton on March 1.
- . Developed a seminar presentation on energy conservation for the Georgia Independent Meat Packers and Processors Convention to be held on March 5.
- . Worked on second publication of the "Conserver" newsletter. It is scheduled for mailing in early March.

. Presentations on the IEES were given to three groups during the month.

. Eight audit reports were completed and presented to industry.

2. Statistics by groups:

	<u>General</u>	<u>Food</u>	<u>Chemical</u>	<u>Textile</u>	<u>Stone</u>
No. of ind. contacted	12	6	4	4	4
No. of trade assns. contacted	0	1	1	1	0
No. of unsolicited industry requests for assistance	3	3	1	2	0
Expenditures for January (\$)	14,559	8,506	9,925	8,999	7,251


3. Comparison to Project Plan: The Program Evaluation Plan (Task III) is behind schedule approximately two months. While the remaining tasks are on schedule as to initiation, we are behind schedule as to quantity of work.
4. Reason for schedule slippage: Task III delayed because sponsor information as to elements required for evaluation was only recently received. The shortage of personnel is the major reason for schedule slippage.
5. Problems encountered: We still are experiencing a problem with personnel shortage. Lack of instruments is still a problem. Some plants are slow in responding to our preliminary evaluation. This delays us in performing detailed evaluations and developing case studies.

Plans for March

1. Complete 7 audits.
2. Publish 6 "energy tips".
3. Publish the second edition of "Industrial Energy Conserver".
4. Conduct "Energy Conservation in Dyehouse Operations" seminar in Dalton on March 1.
5. Develop a one-day seminar, "Energy Conservation: Dryers and Plant Facilities" for the Carpet and Rug Institute scheduled for April 4.
6. Develop a seminar on boilers and steam systems for all industries.
7. Continue to handle technical assistance and plant survey requests as they are received from industry.

Respectfully submitted,

William T. Studstill
Program Coordinator


J. L. Birchfield
Division Chief



ENGINEERING EXPERIMENT STATION

GEORGIA INSTITUTE OF TECHNOLOGY • ATLANTA, GEORGIA 30332

April 10, 1978

Georgia Office of Energy Resources
Trinity-Washington Building
270 Washington Street
Atlanta, Georgia 30334

Subject: Industrial Energy Extension Program
Monthly Progress Summary Report for
EES/GIT Research Project A-2099 for
Period 1 March 1978 through
31 March 1978

Dear Mr. Bistany:

This summarizes activities on Research Project A-2099 for the period
1 March 1978 through 31 March 1978,

Activities of March

1. Monthly activity highlights:

- . Presented a one-day seminar entitled "Energy Conservation in Dyehouse Operations" for the Carpet and Rug Institute. In conjunction with this seminar a handbook was developed and issued to participants. A copy was furnished to you. About 30 representatives from industry attended.
- . The second issue of our newsletter, "Conserver", was printed and mailed to approximately 2,500 industries.
- . Eight energy conservation suggestions were printed on the new flyer, "How To Cut Energy Costs".
- . Preparation time devoted to developing program content and promotion for two Boiler and Steam System workshops planned for May.
- . Effort devoted this month to developing program for one-day workshop, "Energy Conservation in Ovens, Dryers and Other Plant Facilities," for the Carpet and Rug Institute. Workshop is planned for April 4.
- . "An I.E.E.S. project review was presented to the O.E.R. staff and other O.E.R. project managers on March 30.
- . Six audit reports were completed and presented to industry.

2. Statistics by groups:

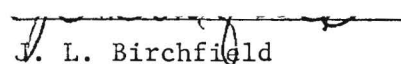
	<u>General</u>	<u>Food</u>	<u>Chemical</u>	<u>Textiles</u>	<u>Stone</u>
No. of ind. contacted	6	3	4	4	7
No. of trade assns. contacted	0	1	2	1	1
No. of unsolicited industry requests for assistance	3	2	1	0	0
Expenditures for February (\$)	14,247	4,682	5,055	3,298	3,382

3. Comparison to Project Plan: While most of the tasks are on schedule as to initiation, the goals as to number of audits, case studies, etc., are behind schedule.
4. Reason for schedule slippage: The shortage of personnel is the major reason for slippage. We are still two engineers short of a full staff.
5. Problems encountered: Lack of adequate manpower is a basic problem. We are continuing to interview candidates, but we are experiencing difficulty in finding qualified engineers. Other problems are: plants slow responding to requests for data; plants slow in implementing recommendations.

Plans for April

1. Complete 11 audit reports.
2. Publish additional energy tips - a minimum of 3 will be developed.
3. Conduct "Energy Conservation in Ovens, Dryers and Other Plant Facilities" workshop on April 4.
4. Continue to develop seminar for boilers and steam systems for presentation in May.
5. Continue to handle technical assistance and plant survey requests from industry.

Respectfully submitted,

William T. Studstill
Program Coordinator
J. L. Birchfield
Division Chief



ENGINEERING EXPERIMENT STATION

GEORGIA INSTITUTE OF TECHNOLOGY • ATLANTA, GEORGIA 30332

May 8, 1978

Mr. Ed Bistany
Georgia Office of Energy Resources
Trinity-Washington Building
270 Washington Street
Atlanta, Georgia 30334

Subject: Industrial Energy Extension Program
Monthly Progress Summary Report for
EES/GIT Research Project A-2099 for
Period 1 April 1978 through
30 April 1978

Dear Mr. Bistany:

This summarizes activities on Research Project A-2099 for the period 1 April 1978 through 30 April 1978.

Activities of April

1. Monthly activity highlights:

- Presented a one-day workshop entitled "Energy Conservation in Ovens, Dryers and Other Plant Facilities" for the Carpet and Rug Institute. In conjunction with this workshop, a handbook was developed and issued to the attendees. About 40 representatives from industry attended. A copy of the handbook and workshop evaluations were furnished to you.
- Effort continued on preparation and arrangements for conducting two boiler and steam system workshops that are scheduled for May 23 and 24. Good advanced registrations have been received.
- Seven audit reports were presented to industry.
- Three energy conservation techniques were developed for our "How To Cut Energy Costs" flyer publication.
- Work was begun this month on the preparation of a workshop on industrial energy conservation. Plans are to present workshops throughout the state beginning in June. The Chambers of Commerce in the larger cities will be asked to cosponsor these programs.
- During the month you and I participated in the "State Workshop on Energy Savings Data Collection" in St. Louis.
- Two staff members attended the American Power Conference in Chicago on April 24-26.

2. Statistics by groups:

	<u>General</u>	<u>Food</u>	<u>Chemical</u>	<u>Textiles</u>	<u>Stone</u>
No. of ind. contacted	5	7	2	3	6
No. of trade assns. contacted	0	0	0	0	0
No. of unsolicited industry requests for assistance	3	2	0	0	0
Expenditures for March (\$)	18,392	4,449	2,953	4,763	3,724

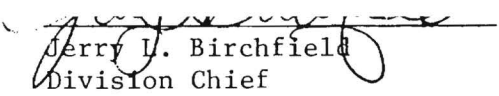
3. Comparison to Project Plan: While most of the tasks are on schedule as to initiation, the goal as to the number of audits is behind schedule.
4. Reason for schedule slippage: The shortage of personnel - specifically in the Chemical and Textile groups - is the major reason for slippage. We are two engineers short of full staff. We are in the process of making offers to two candidates at this time.
5. Problems encountered: Lack of adequate manpower as previously stated.

Plans for May

1. Conduct 2 workshops on boiler efficiency.
2. Complete 10 audit reports.
3. Initiate 7 new plant audits.
4. Develop 3 new "energy tips".
5. Begin evaluation of audit and workshop savings.
6. Develop workshop on energy conservation for general industry application.

Respectfully submitted,

William T. Studstill
Program Coordinator


Jerry U. Birchfield
Division Chief

WTS/rem



ENGINEERING EXPERIMENT STATION

GEORGIA INSTITUTE OF TECHNOLOGY • ATLANTA, GEORGIA 30332

June 5, 1978

Mr. Ed Bistany
Georgia Office of Energy Resources
Trinity-Washington Building
270 Washington Street
Atlanta, Georgia 30334

Subject: Industrial Energy Extension Program
Monthly Progress Summary Report for
EES/GIT Research Project A-2099 for
Period 1 May 1978 through 31 May 1978

Dear Mr. Bistany:

This summarizes activities on Research Project A-2099 for the period 1 May 1978 through 31 May 1978.

Activities of May

1. Monthly activity highlights:

- Presented two 1-day workshops on improving boiler efficiency. Attendees numbered 43 to 47 for the two days. Handout materials to guide industry with boiler energy conservation were prepared and issued to the attendees.
- The May issue of the Conservator was printed and mailed to 2,500 plants and interested individuals.
- Initiated plans for 3-day textile workshop for Barnesville in early fall.
- Prepared material for general industry conservation workshop. Plans are to present this workshop at seven locations throughout the State.
- Along with you and Bob Gaar, met with Macon Chamber of Commerce and arranged for their cosponsorship of the initial general industry conservation workshop for Macon on June 29.
- Two members of staff made presentations for the Energy Information Sharing Workshop promoted by the U.S. Department of Commerce for industry. Approximately 20 industrial representatives attended.
- One staff member attended the American Ceramic Society Annual Convention.

2. Statistics by groups:

	<u>General</u>	<u>Food</u>	<u>Chemical</u>	<u>Textiles</u>	<u>Stone</u>
No. of ind. contacted	7	4	3	7	6
No. of plant visits	6	5	1	4	6
No. of new plants visited to which work has been initiated	2	3	0	1	2
No. of unsolicited requests	1	2	0	0	0
No. of reports sent	3	2	2	6	3
Expenditures for April (\$)	18,947	6,928	3,364	5,362	5,456

3. Comparison to Project Plan: We are behind schedule as to the number of audits completed for most of our groups.
4. Reason for schedule slippage: Shortage of personnel. We have a commitment for one additional engineer to begin work July 1. We will still be one engineer short of full staff. We are in the process of making an offer to a candidate at this time.
5. Problems encountered:
- a. Difficulty in hiring qualified engineers for project.
 - b. Industries are slow with implementation of conservation recommendations.

Plans for June

1. Begin 100% evaluation of in-plant work to determine actual savings.
2. Evaluate actual savings from workshops and information transfer with mail survey.
3. Conduct general industry workshop in Macon on June 29.
4. Complete 13 audit/case study reports for industry.
5. Develop 5 new "energy tips".
6. Improve boiler workshop and plan for its presentation throughout the State.
7. Schedule general industry workshop for locations throughout the State.

Respectfully submitted,

W. T. Studstill
Program Coordinator

Jerry L. Birchfield
Division Chief



ENGINEERING EXPERIMENT STATION

GEORGIA INSTITUTE OF TECHNOLOGY • ATLANTA, GEORGIA 30332

July 6, 1978

Mr. Ed Bistany
Georgia Office of Energy Resources
Trinity-Washington Building
270 Washington Street
Atlanta, Georgia 30334

Subject: Industrial Energy Extension Program
Monthly Progress Summary Report for
EES/GIT Research Project A-2099 for
Period 1 June 1978 through 30 June 1978

Dear Mr. Bistany:

This summarizes activities on Research Project A-2099 for the period 1 June 1978 through 30 June 1978.

Activities of June

1. Monthly activity highlights:

- . Presented an Industrial Energy Conservation workshop in Macon. Approximately 31 industrial representatives attended. Evaluations indicated that the workshop was well received.
- . Scheduled and began preparation for a 3-day workshop for textile industries in Barnesville for August 1, 2 and 3. Workshop will be co-sponsored by the Georgia Textile Manufacturers Association.
- . Along with Bob Gaar, met with Athens Chamber of Commerce and scheduled boiler efficiency and industrial energy conservation workshops for August 8 and 9.
- . Staff member attended 3-day boiler efficiency workshop at Montgomery, Alabama conducted by Auburn University. Purpose of attending was to gain ideas for improving our workshops. Workshop was very beneficial.
- . Three new "energy tips" were developed this month and are in the process of being printed.
- . Contact was made with two trade associations during this month.

2. Statistics by groups:

	<u>General</u>	<u>Food</u>	<u>Chemical</u>	<u>Textiles</u>	<u>Stone</u>
No. of ind. contacted	14	5	3	8	12
No. of plant visits	13	3	0	5	8
No. of new plants visited to which work has been initiated	5	3	0	2	4
No. of unsolicited requests	4	1	0	0	0
No. of reports sent	4	2	0	4	3
Expenditures for May (\$)	18,230	7,904	12,556	5,239	7,910

3. Comparison to Project Plan: A couple of the industry groups are behind schedule as to the number of audits completed.
4. Reason for schedule slippage: Shortage of personnel. We now have hired engineers to complete the staff. One engineer reported for work on July 3; the other will report July 24.
5. Problems encountered: The primary problem is industry's slowness in implementing our recommendations. Our recommended savings in BTU's have been impressive but only a small percentage has been implemented. Actual savings, however, should build with time.

Plans for July

1. Continue evaluation of actual savings.
2. Upgrade boiler efficiency and industrial energy conservation workshop materials in preparation of presentations in August.
3. Complete 12 audit reports.

Respectfully submitted,

W. T. Studstill
Program Coordinator

Jerry L. Birchfield
Division Chief

WTS/rem



ENGINEERING EXPERIMENT STATION

GEORGIA INSTITUTE OF TECHNOLOGY • ATLANTA, GEORGIA 30332

August 7, 1978

Georgia Office of Energy Resources
Trinity-Washington Building
270 Washington Street
Atlanta, Georgia 30334

Subject: Industrial Energy Extension Program
Monthly Progress Summary Report for
EES/GIT Research Project A-2099 for
Period 1 July 1978 through
31 July 1978

Dear Mr. Bistany:

This summarizes activities on Research Project A-2099 for the period 1 July 1978 through 31 July 1978.

Activities of July

1. Monthly activity highlights:

- Finalized preparation for a 3-day workshop for textile industries in Barnesville for August 1, 2, and 3. Workshop will be co-sponsored by the Georgia Textile Manufacturers Association.
- Continued preparation for a boiler efficiency and industrial energy conservation workshop in Athens for August 8 and 9.
- Seven new "energy tips" were developed this month and are in the process of being printed.
- Initiated survey of attendees of June 29, 1978 General Industry Seminar.
- Contact was made with two trade associations during this month.
- The July issue of the Conserver was printed and mailed to 5700 plants and interested individuals.

2. Statistics by groups:

	<u>General</u>	<u>Food</u>	<u>Chemical</u>	<u>Textiles</u>	<u>Stone</u>
No. of ind. contacted	8	1	8	2	5
No. of plant visits	8	2	4	3	2
No. of new plants visited to which work has been initiated	3	1	4	1	0
No. of unsolicited requests	3	0	0	0	0
No. of reports sent	3	0	5	2	2
Expenditures for June (\$)	16,566	6,541	5,288	9,061	12,998

3. Comparison to Project Plan: The food section of the project is behind schedule as to the number of audits completed.
4. Reason for schedule slippage: Shortage of personnel. Two new engineers have reported for work during July; this now completes the staff.
5. Problems encountered: As noted in last month's report, industry has been slow in implementing our recommendations. A number of new contacts have shown enthusiasm for preliminary conservation suggestions, however, and actual savings will quite likely improve.

Plans for August

1. Conduct the Barnesville and Athens workshops.
2. Complete 13 audit reports.
3. Continue evaluation of actual savings.
4. Continue upgrading and preparation of general energy conservation and boiler efficiency improvement manuals.
5. Continue survey work on energy savings resulting from workshop and seminar activities.

Respectfully submitted,

W. T. Studstill
Program Coordinator

for J. L. Birchfield
Division Chief



ENGINEERING EXPERIMENT STATION

GEORGIA INSTITUTE OF TECHNOLOGY • ATLANTA, GEORGIA 30332

August 23, 1978

Mr. Ed Bistany
Georgia Office of Energy Resources
Trinity-Washington Building
270 Washington Street
Atlanta, Georgia 30334

Subject: Industrial Energy Extension Program
Evaluation Report for EES/GIT
Research Project A-2099 for Period
1 August 1977 through 15 August 1978

Dear Mr. Bistany:

This report provides data as to the degree to which the objectives of the IEES program are being accomplished.

Total Number of Audits Conducted Versus Number Planned

Please refer to Table 1 for a breakdown of total audits completed by industry group versus the number planned. The Food Group is the only group that is behind schedule with audits. This is because of a manpower shortage. Plans are to use personnel from other groups and to complete a total of 20 audits by December 31, 1978.

Total Number of Workshops and Seminars Held

Eleven one-day workshops were conducted by Georgia Tech EES plus our staff personnel participated in a one-half day workshop conducted by the U. S. Department of Commerce. Total attendance was approximately 408 people. The listing of the specific workshops is as follows:

<u>Date</u>	<u>Location</u>	<u>Type Workshop</u>	<u>Remarks</u>
1/31/78	Dalton	Boiler	Cosponsored by the Carpet and Rug Institute -45 attendees
3/1/78	Dalton	Dye House Operations	Cosponsored by the Carpet and Rug Institute -32 attendees
4/4/78	Dalton	General (Textile)	Cosponsored by the Carpet and Rug Institute -42 attendees

Table 1 - IEES Evaluation Data

8/1/77 through 8/15/78

<u>Industry Group</u>	<u>Audits Planned 8/77 - 12/80</u>	<u>Audits Completed</u>	<u>No. of Types of Industries Audited</u>	<u>No. of Energy Saving Measures Investigated</u>	<u>Actual Savings (10⁹ BTU's)</u>		<u>Total</u>
					<u>Audits</u>	<u>Workshops</u>	
General	50	28	12	41	137.2	86.0	223.2
Food	50	5	5	38	8.83	1.85	10.68
Textiles	30	5	4	33	7.38	219.0	226.38
Chemicals	20	10	8	16	6.5	4.88	11.38
Stone, Clay, Glass	<u>30</u>	<u>10</u>	<u>8</u>	<u>24</u>	<u>11.0</u>	<u>0.1</u>	<u>11.1</u>
Totals	<u>180</u>	<u>58</u>	<u>37</u>	<u>152</u>	<u>170.91</u>	<u>311.83</u>	<u>482.74</u>

<u>Date</u>	<u>Location</u>	<u>Type Workshop</u>	<u>Remarks</u>
5/5/78	Atlanta	General	One-half day workshop conducted by U. S. Department of Commerce -GA Tech participation (32 attendees)
5/23/78	Atlanta	Boiler	47 attendees
5/24/78	Atlanta	Boiler	42 attendees
6/29/78	Macon	General	Cosponsored by the Greater Macon Chamber of Commerce -25 attendees
8/1/78	Barnesville	Boiler	Cosponsored by the GA Textile Manufacturers Association -25 attendees
8/2/78	Barnesville	Dye House Operations	Cosponsored by the GA Textile Manufacturers Association -25 attendees
8/3/78	Barnesville	General (Textile)	Cosponsored by the GA Textile Manufacturers Association -23 attendees
8/8/78	Athens	Boiler	Cosponsored by the Athens Chamber of Commerce -34 attendees
8/9/78	Athens	General	Cosponsored by the Athens Chamber of Commerce -36 attendees

Quantity of Materials Prepared and Distributed

1. Energy Conservation manuals. These were prepared and distributed to attendees at all of the above listed workshops with the exception of the Barnesville manuals which are presently being prepared. Manuals distributed to date amount to 335 ranging from 90 to 225 pages. An additional 30 have been supplied to industry as a result of mail requests.

2. Industrial Energy Conserver. Four issues of this newsletter have been published and mailed to Georgia industries. The first three issues had a distribution of 2500 plants. The last issue was mailed to all industrial plants in Georgia - approximately 5450. All future issues will be distributed to all of Georgia's industries.

3. Energy Tips. Twenty-three individual "energy tips" have been prepared to date. They have been distributed as follows:

- Inclusion into audit reports depending on the application.
- Inclusion into the workshop manuals.
- Separate handout at Barnesville workshops - 35 copies of the first 14 energy tips.
- By mail in response to written requests - 19 plants to date.
- Various technical assistance correspondence by staff with Georgia industry.

4. Brochures. Individual brochures were printed for each of the five industrial groups. Their distribution has included:

- Mail to 2500 plants with letter explaining the program.
- Mail to 400 industries in Macon area by the Greater Macon Chamber of Commerce.
- 200 distributed by the Georgia Textile Manufacturers Association to Georgia textile plants.
- 200 distributed by the Carpet and Rug Institute to its member industries.
- Approximately 200 distributed at various group meetings and presentations.

5. Slide Presentation. Prepared to explain the program to various groups. Presentations included:

- Georgia Business and Industry, Energy Committee.
- Energy Update for Planners & Developers - 2/2/78.
- Atlanta Gas Light Company - Sales Management Staff.
- Georgia Vocational - Technical School Instructors Annual Meeting.

Degree of Industry Awareness of the O.E.R. Program

No formal evaluation has been conducted to test industry's program awareness. However, it is felt that program awareness is good at this stage and is increasing rapidly. The following activities that have been conducted should have assured a good awareness.

- Letter from Governor Busbee to approximately 2500 plants announcing the program.
- Follow-up letter to these 2500 plants explaining the program and offering energy conservation technical assistance.
- Approximately 160 plant visits.
- Approximately 300 direct plant contacts.
- 58 audit reports submitted to industry.
- Newsletter now being mailed to all of the industries in Georgia.
- 408 workshop attendees from industry.
- Brochures mailed to over 600 Georgia industries relative to workshops.
- Workshop invitations mailed to over 3000 plants.

Number of Different Types of Industries Audited

Thirty-seven types of industries (4-digit SIC) have been audited. Refer to Table 1 for a breakdown by industry groups.

Number of Energy Saving Measures Investigated

One hundred fifty-two energy saving measures have been investigated. Table 1 furnishes a breakdown of the number of measures by industry group.

Actual Energy Savings Achieved by the Program To Date

Table 1 gives the actual energy savings to date by industry group. However, this total of 4.83×10^{11} BTU's only includes the savings from audits and surveyed results from the following workshops:

- Carpet & Rug Institute Workshops - Dalton, 3 days (1/31/78, 3/1/78, 4/4/78)
- Energy Efficiency Sharing Workshop - Atlanta, (5/5/78)
- Boiler Workshops - Atlanta, 2 days, (5/23/78, 5/24/78)
- General Industry Workshop - Macon, (6/29/78)

The savings as a result of the following workshops are not included as they have only recently been held:

- Textile Workshops - Barnesville, 3 days, (8/1/78, 8/2/78, 8/3/78)
- Boiler Workshop - Athens, (8/8/78)
- General Industry Workshop - Athens, (8/9/78)

If the savings can be projected using the surveyed workshops as standards and attendance ratios, the following additional savings might be expected:

Textile Workshops:

$$2.14 \times 10^{11} \times \frac{73}{119} = 1.31 \times 10^{11} \text{ BTU's}$$

Boiler Workshop:

$$8.38 \times 10^{10} \times \frac{34}{89} = 3.20 \times 10^{10} \text{ BTU's}$$

General Industry Workshop:

$$1.37 \times 10^9 \times \frac{36}{30} = \underline{1.64 \times 10^9 \text{ BTU's}}$$

$$\text{Total} \quad \underline{\underline{1.65 \times 10^{11} \text{ BTU's}}}$$

This additional savings will result in the following total savings:

$$\begin{array}{ll} \text{Savings from audits and} & \\ \text{surveyed workshops} & 4.83 \times 10^{11} \text{ BTU's} \end{array}$$

$$\begin{array}{ll} \text{Additional savings pro-} & \\ \text{jected from workshops} & \\ \text{conducted in August} & \\ \text{1978} & \underline{1.65 \times 10^{11} \text{ BTU's}} \end{array}$$

$$\begin{array}{ll} \text{Total actual savings} & \\ \text{(audits and workshops)} & \underline{\underline{6.48 \times 10^{11} \text{ BTU's}}} \end{array}$$

The above figure does not include savings accrued from technical information transfer materials. These materials include newsletters and energy conservation manuals and energy tips supplied to industry upon request. It is anticipated that more than 50% of our total savings will result from technical information transfer. This actual savings will be substantiated by a complete industry survey in the latter phases of the program.

In summary, we feel that we are satisfactorially accomplishing the objectives of the program. Our major difficulty is industry's apathy in implementing energy conservation measures - especially ones requiring sizeable capital expenditures. The reasons for this vary, but most often it is due to giving higher priorities to production areas. However, we feel that actual savings will accelerate for the remainder of the project primarily due to time required for implementation of projects.

I trust this report is complete as to your information needs. I am also enclosing a copy of our workshop evaluation survey report.

Respectfully submitted,

W. T. Studstill
IEES Project Director

Approved:

for J. L. Birchfield

WTS/rem

Enclosure

A Report of a Telephone Survey
Aimed at Evaluating Workshop Effectiveness

by: Dennis J. Coughlin
Assistant Research Engineer
8/17/78

Workshops Evaluated

The following workshops were individually addressed during this survey and analysis:

<u>Title</u>	<u>Location</u>	<u>Date(s)</u>	<u>Topic(s)</u>
Carpet & Rug Institute Workshop	Dalton, GA	1/31/78	Boiler Operating Efficiency
		3/1/78	Energy Conservation in Dyehouse Operating
		4/4/78	Energy Conservation in Ovens, Dryers, and other Plant Facilities
Energy Efficiency Sharing Workshop	Atlanta, GA	5/5/78	General Industrial Energy Conservation
Improving Steam Boiler Operating Efficiency	Atlanta, GA	5/23/78	As title indicates
		5/24/78	
Industrial Energy Conservation	Macon, GA	6/29/78	General Industrial Energy Conservation

Chart 1 in the Appendix gives a breakdown of the number of attendees and Georgia Standard Industrial Classification companies represented at each of the above workshops. Chart 2 in the Appendix shows the SIC code of each of the Georgia companies represented at each of the workshops.

Survey Objectives

This survey and the associated analysis had as their objectives the following items:

1. To ascertain, by virtue of qualitative and quantitative responses to pre-established questions, how effective each workshop was in transmitting information.
2. To determine whether the level of information was appropriate in terms of the needs of the attendees of each of the workshops.
3. To identify potential areas which should be included in future, similar workshops.
4. To gain insight into whether or not Georgia Industries represented at these workshops are practicing programs of energy conservation.
5. To quantify, if possible, actual and anticipated energy savings which the attendees of each of the workshops have realized or are planning.

Survey Procedure and Limitations

The telephone surveys were carried out during the period 8/1/78 to 8/16/78. All personnel who conducted the survey are engineers assigned to the Industrial Energy Extension Service project at the Engineering Experiment Station. A three to four page questionnaire (depending on the workshop) was developed prior to any telephone calls being made, and was used as a guideline for each of the calls. In this way, maximum standardization was designed into the survey results. A copy of the Carpet and Rug Institute Workshop survey form is attached as the last item in the Appendix.

The surveys were conducted on a sample of the Georgia Industries represented at each of the workshops. Companies which have been audited or are in the process of being audited as a part of the Industrial Energy Extension Service were not included in the survey or in the survey results.

Generally, surveys of this type are structured such that the individual giving response to the survey answers yes or no or multiple choice type questions. Since this particular survey had objectives which relied heavily on quantitative responses, such a format could not be used. Consequently, the survey results tend to be conservative, in the sense that (1) some areas of energy conservation were certainly, unintentionally omitted by the responders and (2) there exists a tendency for the responder to be conservative when giving energy savings. These items, then, are the most severe limitations in the survey procedure.

Survey Results

Each of the workshops has been individually analyzed; however, where appropriate, data was totaled for all four workshops. Chart 3 in the Appendix

shows the quantity of companies sampled for each workshop. Note that the companies represented column has been adjusted down to remove those companies who attended a workshop who also have been or are being audited as a part of the IEES program.

The following qualitative results have been tabulated:

- 92% of those surveyed felt that the workshops presented information which was helpful and could be directly applied to their operations.
- 97% of those surveyed indicated that they either have existing energy conservation plans or have intentions to create such plans. Note is made of the fact that the range of sizes and types of plants was such that these plans ranged from "one-man" plans to formal, corporate programs.
- Of those surveyed who had negative comments concerning the level of information, the following diversity of viewpoints was expressed:
 - "I only have a 20 horsepower boiler. What I wanted to learn more about was how to repair my boiler."
 - "I felt that the applied engineering was too basic."
 - "You went into too much technical detail in your calculations---you should have kept it more basic."
- Of those persons sampled who attended the Macon General Industry Workshop, 44% stated either that they thought boilers were going to be discussed or that they were very interested in attending a boiler workshop. These comments were unsolicited.
- Approximately 15% of those sampled made unsolicited comments expressing the desire to see more practical examples of energy conservation calculations.

Every effort was made to get maximum data from those surveyed. Where such data was not available or known, conservative assumptions were made, based on the experiences gained from actual plant audits during the past year, for similar or comparable plants, and energy savings were calculated by EES engineers. Further, where actual data given by a responder seemed unrealistic, such data was changed to more conservative, realistic levels. The effect of these conservative assumptions is to again cause the final results to be conservative.

Chart 3 shows the sample energy savings reported, both actual and anticipated, for each workshop. The sample energy savings were based on reported information given by those sampled, combined with conservative assumptions, where required.

An adjusted factor equal to

$$\frac{\text{sum of employees of all adjusted companies represented}}{\text{sum of employees of all companies sampled}}$$

was derived for each workshop in order to project the reported energy savings of those sampled into the total estimated savings of all the companies represented at each of the workshops. Obviously, the assumption is that there is a correlation between employment level and energy saving activities. Arguments can be made both for and against this assumption, however, it has been judged to be the best method of "scaling up" energy savings reported.

Also, energy savings by SIC code have been broken out in Charts 4 thru 9 in the Appendix, in a manner similar to that described above. Caution should be exercised in looking at these charts versus Chart 3, since for the energy savings calculations by SIC code, adjustment factors for each workshop are appropriate only for that SIC code.

Conclusions

The following conclusions are made:

1. In generally, these workshops are an effective method of transmitting energy conservation technology.
2. In general, the technical level of the information being transmitted is about right.
3. By virtue of the several comments made by attendees of the Macon General Industry Workshop, it seems advisable to conduct a boiler workshop in conjunction with a general industry workshop, in future scheduling.
4. By virtue of positive comments made concerning examples of energy conservation calculations being included in workshops, this course seems well advised.
5. Georgia Industries who attend these workshops are practicing programs of energy conservation.
6. Significant amounts of energy are being actually conserved and are being planned to be conserved by those Georgia industries attending these workshops.

Appendix

Chart 1

Quantity of Persons Registered Vs Number of SIC Companies Represented, by Workshop

<u>Workshop</u>	<u>Quantity of Persons Registered</u>	<u>Number of Georgia SIC Companies Represented</u>
Carpet and Rug Institute		
1/31	45	14
3/1	32	11
4/4	42	16
		<hr/>
		25 = Total number of companies represented at 1 or more days
Macon General Industry	25	18
Atlanta Boiler		
5/23	42	
5/24	47	46
Atlanta Energy Sharing	32	13
	<hr/>	<hr/>
Totals	191	102

Chart 2

Quantity of Georgia SIC Companies Represented, by Workshop and SIC Code

<u>Workshop</u>	<u>All SIC Codes</u>	<u>SIC 20</u>	<u>SIC 22</u>	<u>SIC 28</u>	<u>SIC 32</u>	<u>SIC 23</u>	<u>SIC 24</u>	<u>Others X Frequency</u>
Carpet and Rug Institute	25	0	23	0	0	0	0	39 X 1 30 X 1
Macon General Industry	18	5	3	1	4	2	2	34 X 1
Atlanta Boiler	46	8	7	10	3	5	5	31 X 1 33 X 1 34 X 2 36 X 1 37 X 1 39 X 2
Atlanta Energy Sharing	<u>13</u>	<u>1</u>	<u>2</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	34 X 1 26 X 1 37 X 2 30 X 1 33 X 1 35 X 1 <u>36 X 2</u>
Totals	102	14	35	11	7	8	7	20

Workshop Follow-Up Telephone Survey

Workshop Title: _____ Attendee Surveyed Below: _____
Date Workshop Held: _____ Title: _____
Location of Workshop: _____ Telephone #: _____ SIC Code: _____
Company Name: _____ # of Employees: _____
Surveyor's Name: _____ Date of Survey: _____

SURVEYOR, REMEMBER: THE FEWER QUESTIONS YOU MUST ASK, THE BETTER. IF THE INDIVIDUAL BEING SURVEYED VOLUNTEERS ANY INFORMATION, WHETHER IT RELATES DIRECTLY TO THE QUESTIONS BELOW OR NOT, WRITE THE INFORMATION DOWN. USE THE QUESTIONS BELOW AS GUIDELINES FOR YOU AND PROMPTS FOR THE INDIVIDUAL. BALL-PARK NUMBERS ARE ACCEPTABLE; TRY NOT TO HAVE HIM CALL YOU BACK OR "PUT YOU ON HOLD". FAMILIARIZE YOURSELF WITH THE SURVEY QUESTIONS BEFORE YOU CALL.

1. INTRODUCE YOURSELF BY STATING YOUR NAME AND SAYING THAT YOU ARE WITH THE GEORGIA TECH ENGINEERING EXPERIMENT STATION.
2. REMIND THE INDIVIDUAL THAT HE ATTENDED THE WORKSHOP STATED ABOVE, ON THE DATE AND AT THE LOCATION SHOWN.
3. STATE THAT YOUR PURPOSE IS TO EVALUATE ACTUAL BENEFITS AND SAVINGS BROUGHT ABOUT OR ANTICIPATED AS A RESULT OF THE WORKSHOP.
4. ASK: "In general, was the workshop helpful?"
☐ Yes ☐ No ☐ Cannot say at this time, but will know better in
☐ (weeks, months, etc.)

Comments(s): _____

_____.

5. ASK: "What have you done or do you plan to do to your boiler from an energy savings standpoint?" (PROMPT HIM, IF NECESSARY, BY GIVING THE FOLLOWING BROAD CATEGORIES)

● BOILER TUNE-UP (Air to fuel ratio improvement): _____

● ADDITION OF A HEAT RECOVERY DEVICE (e.g., economizer): _____

● TUBE MAINTENANCE: _____

● WATER TREATMENT PROGRAM: _____

● MISCELLANEOUS (e.g. Insulation addition, condensate return, etc.): _____

IF CHANGES HAVE BEEN MADE OR ARE PLANNED,

6. ASK: "For each of the changes you have made or are planning to make, (DESCRIBED IN # 5 ABOVE), what would you estimate to be the expected savings in BTU'S or overall efficiency increase or % fuel reduction?"
7. IF CHANGES HAVE BEEN MADE OR ARE PLANNED, ASK: "Could you give the following approximate information about the boiler(s) you are now or will be improving?"

Boiler #1

Boiler #2

Boiler #3

Operating Pressure

Pounds steam/hr
or HP

% of rated capacity

Operating time in hours/year
(# of shifts/day, # of days/week)

Present % efficiency
(if known)

8. ASK: "Have you made or are you planning to make changes or additions in any of the following areas?"

- Dyebeck efficiency (e.g., reduced exhaust, added insulation, added doors, etc.): _____

Estimated Savings: _____

- Dyebath reuse: _____

Estimated Savings: _____

- Oven efficiency: _____

Estimated Savings: _____

- Dryer efficiency: _____

Estimated Savings: _____

- Electrical demand control: _____

Estimated Savings: _____

- Lighting and electrical power usage: _____

Estimated Savings: _____

- HVAC system: _____

Estimated Savings: _____

- Any other: _____

Estimated Savings: _____

9. ASK: "What is your approximate annual energy usage:"

Electrical: _____ KWH; Natural gas: _____ CCF;
Fuel oil: (Type) _____, _____ gallons; other: _____.

10. ASK: "Can we be of further help to you with energy conservation?": _____

11. THANK HIM FOR HIS TIME. TELL HIM, SHOULD HE HAVE A NEED FOR ASSISTANCE, TO PLEASE CONTACT THE ENGINEERING EXPERIMENT STATION AT GEORGIA TECH.

Chart 3

Total Energy Savings, by Workshop

<u>Workshop</u>	<u>Qty. of GA SIC Companies Represented</u>		<u>Qty. Sampled</u>	<u>Sample Reported Savings, in BTU's/yr</u>		<u>Adjustment Factor(2)</u>	<u>Total Estimated Savings, in BTU's/yr(3)</u>	
	<u>Actual</u>	<u>Adjusted(1)</u>		<u>Actual</u>	<u>Anticipated</u>		<u>Actual</u>	<u>Anticipated</u>
Carpet and Rug Institute	25	20	10	1.45×10^{11}	2.41×10^{11}	7602/5143	2.14×10^{11}	3.56×10^{11}
Macon General Industry	18	13	9	2.81×10^8	3.158×10^{10}	3546/1683	5.92×10^8	6.65×10^{10}
Atlanta Boiler	46	37	15	2.05×10^{10}	2.91×10^{11}	19337/4726	8.38×10^{10}	1.19×10^{12}
Atlanta Energy Sharing	13	10	4	6.95×10^9	2.913×10^{11}	10867/5555	1.36×10^{10}	5.7×10^{11}
Totals	102	80	38	1.727×10^{11}	8.55×10^{11}	--	3.12×10^{11}	2.183×10^{11}

- (1) Adjusted industries represented column represents the actual number of SIC companies represented minus those companies who have been or are being audited by EES personnel.
- (2) Adjustment factor equals the sum of the employees of all companies represented divided by the sum of the employees of all companies sampled.
- (3) Total estimated savings column equals sample BTU's saved column values multiplied by adjustment factor.

Chart 4

Energy Savings, by Workshop, SIC Code 20

<u>Workshop</u>	<u>Qty. of GA SIC 20 Companies Represented</u>		<u>Qty. Sampled</u>	<u>Sample Reported Savings, in BTU's/yr</u>		<u>Adjustment Factor(2)</u>	<u>Total Estimated Savings, in BTU's/yr(3)</u>	
	<u>Actual</u>	<u>Adjusted(1)</u>		<u>Actual</u>	<u>Anticipated</u>		<u>Actual</u>	<u>Anticipated</u>
Carpet and Rug Institute	0	0	--	--	--	--	--	--
Macon General Industry	5	3	2	2.19×10^8	2.3×10^9	956/306	6.84×10^8	7.19×10^9
Atlanta Boiler	8	8	3	6.6×10^8	3.246×10^{10}	2872/1621	1.17×10^9	5.75×10^{10}
Atlanta Energy Sharing	<u>1</u>	<u>0</u>	<u>0</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>
Totals	14	11	5	8.79×10^8	3.476×10^{10}	--	1.854×10^9	6.47×10^{10}

- (1) Adjusted industries represented column represents the actual number of SIC companies represented minus those companies who have been or are being audited by EES personnel.
- (2) Adjustment factor equals the sum of the employees of all companies represented for this SIC code divided by the sum of the employees of all companies sampled for this SIC code.
- (3) Total estimated savings column equals sample BTU's saved column values multiplied by adjustment factor.

Chart 5

Energy Savings, by Workshop, SIC Code 22

<u>Workshop</u>	<u>Qty. of GA SIC 22 Companies Represented</u>		<u>Qty. Sampled</u>	<u>Sample Reported Savings, in BTU's/yr</u>		<u>Adjustment Factor(2)</u>	<u>Total Estimated Savings, in BTU's/yr(3)</u>	
	<u>Actual</u>	<u>Adjusted(1)</u>		<u>Actual</u>	<u>Anticipated</u>		<u>Actual</u>	<u>Anticipated</u>
Carpet and Rug Institute	23	18	10	1.45×10^{11}	2.41×10^{11}	7403/5143	2.09×10^{11}	3.47×10^{11}
Macon General Industry	3	3	2	0	0	551/404	0	0
Atlanta Boiler	7	4	2	3.86×10^9	2.84×10^{10}	1553/1087	5.51×10^9	4.06×10^{10}
Atlanta Energy Sharing	<u>2</u>	<u>2</u>	<u>1</u>	<u>8.84×10^8</u>	<u>8.74×10^8</u>	<u>1160/240</u>	<u>4.27×10^9</u>	<u>4.22×10^9</u>
Totals	35	27	15	1.497×10^{11}	2.7×10^{11}	--	2.19×10^{11}	3.92×10^{11}

- (1) Adjusted industries represented column represents the actual number of SIC companies represented minus those companies who have been or are being audited by EES personnel.
- (2) Adjustment factor equals the sum of the employees of all companies represented for this SIC code divided by the sum of the employees of all companies sampled for this SIC code.
- (3) Total estimated savings column equals sample BTU's saved column values multiplied by adjustment factor.

Chart 6

Energy Savings, by Workshop, SIC Code 28

<u>Workshop</u>	<u>Qty. of GA SIC 28 Companies Represented</u>		<u>Qty. Sampled</u>	<u>Sample Reported Savings, in BTU's/yr</u>		<u>Adjustment Factor(2)</u>	<u>Total Estimated Savings, in BTU's/yr(3)</u>	
	<u>Actual</u>	<u>Adjusted(1)</u>		<u>Actual</u>	<u>Anticipated</u>		<u>Actual</u>	<u>Anticipated</u>
Carpet and Rug Institute	0	0	0	0	0	0	0	0
Macon General Industry	1	1	0	0	0	0	0	0
Atlanta Boiler	10	6	2	2.78×10^9	4.13×10^{10}	318/181	4.88×10^9	7.26×10^{10}
Atlanta Energy Sharing	0	0	0	0	0	0	0	0
Totals	11	7	2	2.78×10^9	4.13×10^{10}	--	4.88×10^9	7.26×10^{10}

- (1) Adjusted industries represented column represents the actual number of SIC companies represented minus those companies who have been or are being audited by EES personnel.
- (2) Adjustment factor equals the sum of the employees of all companies represented for this SIC code divided by the sum of the employees of all companies sampled for this SIC code.
- (3) Total estimated savings column equals sample BTU's saved column values multiplied by adjustment factor.

Chart 7

Energy Savings, by Workshop, SIC Code 32

<u>Workshop</u>	<u>Qty. of GA SIC 32 Companies Represented</u>		<u>Qty. Sampled</u>	<u>Sample Reported Savings, in BTU's/yr</u>		<u>Adjustment Factor(2)</u>	<u>Total Estimated Savings, in BTU's/yr(3)</u>	
	<u>Actual</u>	<u>Adjusted(1)</u>		<u>Actual</u>	<u>Anticipated</u>		<u>Actual</u>	<u>Anticipated</u>
Carpet and Rug Institute	0	0	0	0	0	0	0	0
Macon General Industry	4	3	2	6.21×10^7	2.15×10^{10}	921/620	9.22×10^7	3.19×10^{10}
Atlanta Boiler	3	2	1	0	3.54×10^{10}	188/168	0	3.96×10^{10}
Atlanta Energy Sharing	0	0	0	0	0	0	0	0
Totals	7	5	3	6.21×10^7	5.69×10^{10}	--	9.22×10^7	7.15×10^{10}

- (1) Adjusted industries represented column represents the actual number of SIC companies represented minus those companies who have been or are being audited by EES personnel.
- (2) Adjustment factor equals the sum of the employees of all companies represented for this SIC code divided by the sum of the employees of all companies sampled for this SIC code.
- (3) Total estimated savings column equals sample BTU's saved column values multiplied by adjustment factor.

Chart 8

Energy Savings, by Workshop, SIC Code 23

<u>Workshop</u>	<u>Qty. of GA SIC 23 Companies Represented</u>		<u>Qty. Sampled</u>	<u>Sample Reported Savings, in BTU's/yr</u>		<u>Adjustment Factor(2)</u>	<u>Total Estimated Savings, in BTU's/yr(3)</u>	
	<u>Actual</u>	<u>Adjusted(1)</u>		<u>Actual</u>	<u>Anticipated</u>		<u>Actual</u>	<u>Anticipated</u>
Carpet and Rug Institute	0	0	0	0	0	0	0	0
Macon General Industry	2	0	0	0	0	0	0	0
Atlanta Boiler	5	4	2	1.02×10^{10}	0	1425/931	1.56×10^{10}	0
Atlanta Energy Sharing	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Totals	8	4	2	1.02×10^{10}	0	--	1.56×10^{10}	0

- (1) Adjusted industries represented column represents the actual number of SIC companies represented minus those companies who have been or are being audited by EES personnel.
- (2) Adjustment factor equals the sum of the employees of all companies represented for this SIC code divided by the sum of the employees of all companies sampled for this SIC code.
- (3) Total estimated savings column equals sample BTU's saved column values multiplied by adjustment factor.

Chart 9

Energy Savings, by Workshop, SIC Code 24

<u>Workshop</u>	<u>Qty. of GA SIC 24 Companies Represented</u>		<u>Qty. Sampled</u>	<u>Sample Reported Savings, in BTU's/yr</u>		<u>Adjustment Factor(2)</u>	<u>Total Estimated Savings, in BTU's/yr(3)</u>	
	<u>Actual</u>	<u>Adjusted(1)</u>		<u>Actual</u>	<u>Anticipated</u>		<u>Actual</u>	<u>Anticipated</u>
Carpet and Rug Institute	0	0	0	0	0	0	0	0
Macon General Industry	2	2	2	0	7.78×10^9	1	0	7.78×10^9
Atlanta Boiler	5	5	2	0	1.49×10^{11}	296/123	0	3.59×10^{11}
Atlanta Energy Sharing	0	0	0	0	0	0	0	0
Totals	7	7	4	0	1.57×10^{11}	--	--	3.67×10^{11}

- (1) Adjusted industries represented column represents the actual number of SIC companies represented minus those companies who have been or are being audited by EES personnel.
- (2) Adjustment factor equals the sum of the employees of all companies represented for this SIC code divided by the sum of the employees of all companies sampled for this SIC code.
- (3) Total estimated savings column equals sample BTU's saved column values multiplied by adjustment factor.



ENGINEERING EXPERIMENT STATION

GEORGIA INSTITUTE OF TECHNOLOGY • ATLANTA, GEORGIA 30332

September 6, 1978

Mr. Ed Bistany
Georgia Office of Energy Resources
Trinity-Washington Building
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Subject: Industrial Energy Extension Program
Monthly Progress Summary Report for
EES/GIT Research Project A-2099 for
Period 1 August 1978 through
31 August 1978

Dear Mr. Bistany:

This summarizes activities on Research Project A-2099 for the month of August.

Activities of August

1. Monthly activity highlights:

- Conducted a 3-day workshop in Barnesville for the textile industry. The program was cosponsored by the Georgia Textile Manufacturers Association. Attendance averaged 25 industrial representatives per day. Evaluations showed that the workshop was well received.
- Completed all sections for workshop manual that will be distributed to attendees at Barnesville textile workshop. These are now being printed.
- Conducted a 2-day workshop in Athens on boilers and general industrial energy conservation. This program was cosponsored by the Athens Chamber of Commerce, and attendance averaged 35 per day. The evaluations by the industry representatives attending were very good.
- Participated in an industrial energy conservation workshop conducted by the Georgia Power Company. Presented the IEES program and furnished sets of "energy tips" to the attendees. About 20 industrial representatives came to the one-half day program.
- Compiled and furnished to you a special report on IEES project accomplishments to date. The work necessary for the preparation of this special report included a survey of workshop attendees as to energy savings. Actual savings through August 15 for the audits and workshops were 6.48×10^{11} BTU's.

- Surveyed chemical industries as to workshop needs and interests. Results indicated that the present general industry workshop program supplies most of this industry's needs in this area of service.
- Prepared 2 new "energy tips" this period. A total of 4 new "energy tips" were printed this month.
- Twenty written requests for workshop manuals and sets of energy tips from industry were filled this month.
- Met with several Chambers of Commerce this month to schedule energy conservation workshops. Two-day programs have been scheduled in the following locations for the remainder of the calendar year: Columbus, Rome, Atlanta, Augusta, and Savannah. Effort is also being made to schedule a workshop for Albany.

2. Statistics by groups:

	<u>General</u>	<u>Food</u>	<u>Chemical</u>	<u>Textiles</u>	<u>Stone</u>
No. of ind. contacted	7	5	9	2	4
No. of plant visits	4	3	3	1	4
No. of new plants visited to which work has been initiated	1	3	2	0	1
No. of unsolicited requests	2	1	2	2	0
No. of reports sent	2	0	6	2	1
Expenditures for July (\$)	20,887	6,561	6,804	6,417	4,653

3. Comparison to Project Plan: The Food group continues to run behind schedule as to the number of audits completed. Personnel from other groups will be used to bring the Food group back up to schedule.
4. Reason for schedule slippage: Shortage of personnel in the Food group. Also, staff has been utilized more heavily than anticipated with workshops and the preparation of workshop manuals.
5. Problems encountered: Industry's delay in implementing energy conservation recommendations. One reason for this is that most require quick pay-back (2 years or less), and they put higher priority on production related projects.


Plans for September


1. Refine all workshops - including presentations as well as workshop manuals.
2. Present 2-day textile workshop in Columbus.

September 6, 1978

3. Conduct follow-up with audit firms and begin documenting case studies.
4. Continue industry audit work to remain on schedule and accelerate audit production in Food group.
5. Plan "Wood and Industrial Waste Utilization Seminar" for October.

Respectfully submitted,


W. T. Studstill
Program Coordinator


J. L. Birchfield
Division Chief

WTS/rem



ENGINEERING EXPERIMENT STATION

GEORGIA INSTITUTE OF TECHNOLOGY • ATLANTA, GEORGIA 30332

November 6, 1978

Mr. Ed Bistany
Georgia Office of Energy Resources
Trinity-Washington Building
270 Washington Street
Atlanta, Georgia 30334

Subject: Industrial Energy Extension Program
Monthly Progress Summary Report for
EES/GIT Research Project A-2099 for
Period 1 October 1978 through
31 October 1978

Dear Mr. Bistany:

This summarizes activities on Research Project A-2099 for the month of October.

Activities of October

1. Monthly activity highlights:

- o Conducted 5 energy conservation workshops during the month. These included 3 Industrial Energy Conservation Workshops and 2 Boiler Operating Efficiency Workshops. These programs were conducted in Rome, Atlanta and Augusta. Attendance of industrial representatives averaged about 25 and their evaluations were very good. Workshop manuals were furnished to all attendees.
- o Planned and prepared for the Wood and Alternate Fuels Seminar for industry scheduled for November 16. Invitations were mailed to over 2500 Georgia industries.
- o Reprinted all of the "energy tips". We now have 28. Requests for these have been strong, and we filled requests from approximately 10 industries this month. Also, approximately 30 sets were supplied to Georgia Power Company for distribution to Georgia industry.
- o Planned one-half day energy conservation seminar with Georgia Power Company. This program will be directed at top management to stimulate implementation of conservation programs. The seminar is scheduled for December 14.
- o Began planning for one-day workshop for the Carpet and Rug Institute. This will be held in Dalton on November 30.

- o Developed IEES program evaluation methodology and furnished same to you during the month. Through September, the IEES program energy savings are estimated to be 3.08×10^{12} BTU.
- o Good audit reports are being submitted to industry. Recommended energy savings in 5 chemical sector reports totaled 358×10^9 BTU.
- o A manuscript on the IEES program was submitted for publication in the Georgia Professional Engineer.

2. Statistics by groups:

	<u>General</u>	<u>Food</u>	<u>Textiles</u>	<u>Chemical</u>	<u>Stone</u>
No. of ind. contacted:	8	3	5	3	5
No. of plant visits:	5	7	5	3	3
No. of new plants visited to which work has been initiated:	2	1	0	1	0
No. of unsolicited requests:	4	1	1	1	0
No. of reports sent:	0	1	5	5	1
Expenditures for Sept. (\$)	23,634	8,583	5,287	7,945	9,122

- 3. Comparison to Project Plan: The Food group is behind schedule as to the number of audits completed. Effort is being made to bring this area back up to schedule.
- 4. Reason for schedule slippage: Personnel shortage in the early phase of the program, and more time devoted to workshops in recent months.
- 5. Problems encountered: Industry's slowness in implementing energy conservation recommendations - especially ones requiring appreciable capital investments.

Plans for November

- 1. Conduct a Boiler Operating Efficiency Workshop in Augusta on November 14.
- 2. Conduct the Wood Energy and Alternate Fuels Seminar on November 16.
- 3. Conduct an Energy Conservation Workshop for the Carpet and Rug Institute in Dalton on November 30.
- 4. Evaluate savings from audits and workshops.
- 5. Develop and document "case studies" for information transfer.
- 6. Continue to conduct audits, provide technical assistance and furnish technical information to Georgia industry.

Respectfully submitted,

JL

J. L. Birchfield
Division Chief

W. T. Studstill
Program Coordinator

A-2099



ENGINEERING EXPERIMENT STATION
GEORGIA INSTITUTE OF TECHNOLOGY • ATLANTA, GEORGIA 30332

December 5, 1978

Mr. Ed Bistany
Georgia Office of Energy Resources
Trinity-Washington Building
270 Washington Street
Atlanta, Georgia 30334

Subject: Industrial Energy Extension Program
Monthly Progress Summary Report for
EES/GIT Research Project A-2099 for
Period 1 November 1978 through
30 November 1978

Dear Mr. Bistany:

This summarizes activities on Research Project A-2099 for the month of November.

Activities of November

1. Monthly activity highlights:

- o Conducted 3 energy workshops. These were:

- (1) Boiler Operating Efficiency Workshop, Augusta
- (2) Energy Conservation in the Textile Industry, Dalton
- (3) Wood and Alternate Energy Sources, Atlanta

These programs were well attended and evaluations were good. Hand-books were distributed to attendees at the workshops listed as #'s 1 and 2. Considerable time and effort were devoted to the preparation of these programs.

- o Prepared abstract on IEES program for the 14th Intersociety Energy Conversion Engineering Conference.
- o Completed computer program related to improving boiler efficiency. This is now being offered to Georgia industry as a service to improve boiler efficiency. This program along with our other computer program on demand control gives us two computer service programs for Georgia industry.
- o Prepared and printed two new "energy tips" this month. We now have a total of 30 published energy tips.
- o The November issue of the Conserver was prepared. Due to an error in printing, mailing was delayed. It is expected to be mailed this week.

December 5, 1978

- o Planned a top-management, energy management seminar with the Georgia Power Company. Due to Governor Busbee not being able to participate in December, this seminar has been postponed until after January 1.
- o Prepared for three energy conservation workshops scheduled for December.

2. Statistics by groups:

	<u>General</u>	<u>Food</u>	<u>Textile</u>	<u>Chemical</u>	<u>Stone</u>
No. of ind. contacted:	5	5	2	5	3
No. of plant visits:	4	4	2	4	3
No. of new plants visited to which work has been initiated:	1	0	2	1	0
No. of unsolicited requests:	3	1	1	0	1
No. of reports sent:	3	5	2	2	1
Expenditures for Oct. (\$):	12,532	11,556	17,137	9,086	5,077

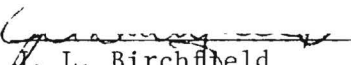
3. Comparison to Project Plan: The Food group is still behind schedule as to the number of audits completed. The others are on or ahead of schedule.
4. Reason for schedule slippage: Personnel shortage in the Food group with available effort devoted heavily to workshops.
5. Problems encountered: Industry continues to be slow with implementation of recommendations. A variety of factors relate to this problem, but competition for capital is a major one.

Plans for December

1. Conduct a Boiler Operating Efficiency Workshop and a General Industry Workshop in Savannah on December 5 and 6.
2. Conduct a one-day workshop for the textile industries of the Chattanooga area.
3. Evaluate savings from audits and workshops.
4. Continue to conduct audits, provide technical assistance and furnish technical information to Georgia industries.

Respectfully submitted,

W. T. Studstill
Program Coordinator


D. L. Birchfield
Division Chief



ENGINEERING EXPERIMENT STATION

GEORGIA INSTITUTE OF TECHNOLOGY • ATLANTA, GEORGIA 30332

January 5, 1979

Mr. Ed Bistany
Georgia Office of Energy Resources
Trinity-Washington Building
270 Washington Street
Atlanta, Georgia 30334

Subject: Industrial Energy Extension Program
Monthly Progress Summary Report for
EES/GIT Research Project A-2099 for
Period 1 December 1978 through
31 December 1978

Dear Mr. Bistany:

This summarizes activities on Research Project A-2099 for the month of December.

Activities of December

1. Monthly activity highlights:

- o Conducted 2 energy workshops. These were:

- (1) Boiler Operating Efficiency Workshop, Savannah
- (2) Industrial Energy Conservation Workshop, Savannah

Approximately 13-15 industry representatives attended each of these workshops. Even with the small attendance, both programs were well received. The audience included representatives from several large industries and good contacts were made that will lead to future work with these firms. Handbooks were furnished to all the attendees.

- o Prepared news release on the progress of the IEES program and submitted to OER for possible release through the Governor's office.
- o Sets of "energy tips" were furnished to 7 Georgia industrial plants.
- o A one-day workshop was conducted for the textile industries in the Chattanooga area. The program was attended by approximately 70 representatives - the majority were from Georgia.
- o Bound 100 sets of "energy tips" that will be furnished to RBI International (carpet industry consultant) for distribution to Georgia carpet mills.
- o Participated in D.O.E.'s Industrial Energy Conservation Seminar on December 14 and 15.

Mr. Ed Bistany
Monthly Progress Summary Report
January 5, 1979

- o Developed work program for 1979. Emphasis to be on developing case studies and conducting technology-specific workshops.

2. Statistics by groups:

	<u>General</u>	<u>Food</u>	<u>Textile</u>	<u>Chemical</u>	<u>Stone</u>
No. of ind. contacted:	4	5	1	7	0
No. of plant visits:	2	6	3	5	0
No. of new plants visited to which work has been initiated:	1	1	0	3	0
No. of unsolicited requests:	2	1	0	0	1
No. of reports sent:	0	1	10	3	1
Expenditures for Nov. (\$):	8,483	8,277	7,487	9,150	12,943

3. Comparison to Project Plan: The number of audits in the Food Group is less than we established as a goal. However, we feel we have a sufficiently large sample to ensure the overall success of our program. We will continue to do audits as requested and as needed to sample the different processes.
4. Reason for schedule slippage: Higher priority assigned to workshops.
5. Problems encountered: Many industries slow with implementing an aggressive energy management program.

Plans for January

1. Begin implementing 1979 work program. Early attention on the following:
 - o Develop case studies - goal of 20 for the year. Early attention will be placed on this element for use in workshops.
 - o Begin development of Wood, Coal, & Alternate Fuels Handbook. This will be used in conducting 4 workshops during the year.
 - o Finalize workshop schedule and personnel assignments for 1979 program.
2. Print and mail January issue of Conserver.

Respectfully submitted,

W. T. Studstill
Program Coordinator

J. L. Birchfield
Division Chief